Having thus described the preferred embodiment, the invention is now claimed to be:

1. A single-use package for holding a powdered composition which forms a solution of an anti-microbial decontaminant when mixed with water and for selectively releasing the composition, the package comprising:

a porous portion which is impermeable to the powdered composition but is permeable to water and to the solution; and,

an indicator on the porous portion which exhibits a detectable change on exposure to the decontaminant in the solution.

2. The package of claim 1, further including:

a first compartment for receiving a first component of the composition; and,

a second compartment for receiving a second component of the composition, the porous portion, first compartment, and second compartment configured for forming a fluid flow path for the decontaminant solution through the package.

3. The package of claim 2, wherein the cartridge further includes:

an outer, first cup including a first peripheral wall with an opening at an end, the first peripheral wall being at least selectively water transmissive;

an inner, second cup including a second peripheral wall, the second peripheral wall being at least selectively water transmissive, the first and second cups being configured such that the second peripheral wall abuts and is connected to the first cup adjacent the end of the first peripheral wall;

a top cover covering the openings in the first and second cups, such that the first compartment is defined in the first cup and the second compartment is defined in the second cup.

4. The package of claim 3, wherein the first peripheral wall includes a region which is formed from a first material which is impermeable to the first component but is permeable to water and to solutions containing dissolved components.

5. The package of claim 3, wherein the first cup peripheral wall includes a side and a base, and wherein the base is detachable from the side.

A2 6. The package of claim 3, wherein the second peripheral wall includes a region which is formed from a second material which is impermeable to the first and second components but is permeable to water and to solutions containing dissolved components.

7. The package of claim 6, wherein the second peripheral wall defines a hemisphere and is formed from the second material.

A3 8. The package of claim 3, wherein the top cover defines the porous portion.

9. The package of claim 1, wherein the porous portion is formed from a material selected from the group consisting of non-woven polypropylene web, woven polypropylene, woven polyethylene, non-woven polyethylene, nylon, rayon, rigid porous media, porous plastic, mesh, and combinations thereof.

10. The package of claim 2, wherein the decontaminant includes peracetic acid and the first component includes acetylsalicylic acid and the second component includes sodium perborate.

11. The package of claim 1, wherein the indicator includes an oxidizable species which changes color on prolonged contact with the solution.

12. The package of claim 1 wherein the indicator is specific for the decontaminant.

13. The package of claim 1, wherein the indicator is less sensitive to pH than to the decontaminant.

14. The package of claim 1, wherein the indicator is impregnated into the porous portion in the form of an ink.

Sub A4 15. The package of claim 1, wherein the indicator exhibits a detectable color change when exposed to a sufficient concentration of the decontaminant for a sufficient period of time to effect decontamination.

16. The package of claim 1, wherein the decontaminant is peracetic acid and the indicator provides a detectable color change when the peracetic acid is at a concentration of about 900 ppm or above for a preselected period of time.

17. The package of claim 1, wherein the decontaminant is peracetic acid and the indicator is selected from the group consisting of crystal violet, bromocresol green, bromothymol blue, bromothymol green, methyl purple, and combinations thereof.

18. The package of claim 17, wherein the indicator includes crystal violet.

Sub A5 19. An anti-microbial system which receives the package of claim 1 comprising:

a well for receiving the package of claim 1;

a source of water connected with the well for mixing with the powdered composition to form the antimicrobial solution;

a microbial decontamination chamber connected with the well for receiving the anti-microbial solution, the well, the porous region, and the chamber forming a recirculating fluid flow path for the decontaminant solution.

20. A package for releasing an antimicrobial composition into a flowing liquid, the package comprising:

a side wall having a first opening at a first end and a second opening at a second end such that the liquid flows through the first opening into the package and out through the second opening;

a layer of porous material spanning one of the first and second openings such that the liquid flows through the porous material layer;

an antimicrobial source disposed within the package for releasing the antimicrobial composition into the flowing liquid to form an antimicrobial solution;

an indicator on the porous material layer which changes color in response to contact with the antimicrobial solution, a degree of color change varying in accordance with (i) a concentration of an antimicrobial agent in the solution contacting the indicator, and (ii) a duration that the solution contacts the indicator such that the degree of color change of the indicator is indicative of duration of contact and the concentration of the antimicrobial agent in the contacting solution.

Sub A6

21. A method comprising:

flowing water through a cartridge containing a composition to form a decontaminant solution from the composition and the water, the cartridge including a porous region impregnated with an indicator, the indicator exhibiting a detectable change when contacted with a decontaminant solution for a period of time and at a

concentration of a decontaminant in the solution sufficient to effect decontamination of items;

circulating the decontaminant solution in a fluid flow path comprising a microbial decontamination chamber, in which the items to be decontaminated are positioned, and the porous region;

examining the indicator for the detectable change.